

What is claimed is:

1. An optical module comprising:

a substrate carrying a light emitting device and an optical monitor; and

a plate that is positioned in a path of light emitted by the light emitting

5 device and that is transparent to light emitted by the light emitting device to allow some of the light from the light emitting device to be transmitted through the plate, wherein the plate includes a plurality of reflective regions, a first one of the reflective regions located to reflect some of the light emitted by the light emitting device and a second one of the reflective regions located to receive light reflected by the first reflective region and to
10 direct the received light to the optical monitor.

2. The optical module of claim 1 wherein the first and second reflective regions are located on a same side of the plate.

15 3. The optical module of claim 2 wherein the first and second reflective regions comprise grooves in a surface of the plate.

4. The optical module of claim 2 wherein the first and second reflective regions include angled facets that provide total internal reflection of light impinging on
20 the facets.

5. The optical module of claim 2 wherein some of the light emitted by the light emitting device passes through first and second sides of the plate, and wherein the

first and second reflective regions are located on a side of the plate that is further from the light emitting device and the optical monitor.

6. The optical module of claim 2 wherein the first reflective region is offset
5 from an optical axis of the light emitting device.

7. The optical module of claim 1 wherein the substrate includes a cavity within which the light emitting device and optical monitor are enclosed.

10 8. The optical module of claim 7 wherein the plate is positioned over the cavity.

9. The optical module of claim 8 wherein the plate is sealed hermetically to the substrate.

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10. The optical module of claim 1 wherein the substrate includes hermetic, electrical feed throughs to the light emitting device and optical monitor.

11. The optical module of claim 1 wherein the plate includes a focusing lens
20 to focus light from the light emitting device that is transmitted through the plate, wherein the focusing lens is located on a same side of the plate as the first and second reflective regions.

12. An apparatus comprising:
a light emitting device and an optical monitor;
a hermetically sealed housing enclosing the light emitting device and
optical monitor, the housing including a substrate for the light emitting device and optical
5 monitor; and

a plate that is positioned in a path of light emitted by the light emitting
device and that is transparent to light emitted by the light emitting device to allow some
of the light from the light emitting device to be transmitted through the plate, wherein the
plate includes a plurality of reflective regions on a surface of the plate, a first one of the
10 reflective regions located to reflect some of the light emitted by the light emitting device
and a second one of the reflective regions located to receive light reflected by the first
reflective region and to direct the received light to the optical monitor.

13. The apparatus of claim 12 wherein the first and second reflective regions
15 comprise grooves in the surface of the plate.

14. The apparatus of claim 12 wherein the first and second reflective regions
include angled facets that provide total internal reflection of light impinging on the facets.

20 15. The apparatus of claim 13 wherein the plate includes first and second sides
that are substantially perpendicular to an optical axis of the light emitting device, and the
first and second reflective regions are located on a side of the plate that is further from
the light emitting device and the optical monitor.

16. The apparatus of claim 12 wherein the first reflective region is offset from an optical axis of the light emitting device.

5 17. The apparatus of claim 12 wherein the substrate includes a cavity within which the light emitting device and optical monitor are enclosed.

18. The apparatus of claim 17 wherein the plate is positioned over the cavity.

10 19. The apparatus of claim 18 wherein the plate is sealed hermetically to the substrate.

20. The apparatus of claim 12 wherein the substrate includes hermetic, electrical feed throughs to the light emitting device and optical monitor.

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21. The apparatus of claim 12 wherein the plate includes a focusing lens to focus light from the light emitting device that is transmitted entirely through the plate, wherein the focusing lens is located on a same side of the plate as the first and second reflective regions.

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22. An optical assembly comprising:
an optical module comprising a housing in which a light emitting device and an optical monitor are mounted;

a multi-functional piece comprising:

a cavity to receive the optical module; and

a first reflective surface to reflect light from the light emitting device in a direction substantially perpendicular to a direction of light emitted by the light emitting device; and

a second reflective surface to reflect some of the light from the first reflective surface to the optical monitor.

23. The optical assembly of claim 22 wherein the multi-functional piece includes a receptacle for an optical fiber ferrule, wherein a fiber may be positioned in the receptacle to receive at least some of the light reflected by the first reflective surface and not subsequently reflected by the second reflective surface.

24. The optical assembly of claim 22 wherein the second reflective surface is positioned to reflect light from the first reflective surface in a direction substantially perpendicular to a direction of light reflected by the first reflective surface.

25. The optical assembly of claim 24 wherein the light emitting device and the optical monitor are hermetically sealed in the optical module.

26. A method comprising:
emitting light from a solid state device through a plate that is transparent to light emitted by the light emitting device;

reflecting a portion of the emitted light at a first reflective region in the plate;
receiving the reflected light at a second reflective region in the plate and directing
the received light to an optical monitor enclosed within a same housing as the solid state
device.

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27. A method comprising:

emitting light from a solid state device housed in an optical module that includes a
cover that is transparent to light emitted by the light emitting device, wherein the light
passes through the cover;

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reflecting a portion of the emitted light that passes through the cover, wherein the
portion of light is reflected at a first reflective region in a direction substantially
perpendicular to a direction of light emitted by the light emitting device;

using a second reflective region to reflect some of the light reflected by the first
reflective region to an optical monitor housed in the optical module.

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28. The method of claim 27 including coupling light that is reflected by the
first reflective region, but not subsequently reflected by the second reflective region, to
an optical component.

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29. The method of claim 27 including coupling light that is reflected by the
first reflective region, but not subsequently reflected by the second reflective region, to
an optical fiber.